



ABSTRACT

Devices for enhancing the sensitivity of a microsensor or any other micro device by providing on-line preconcentration. Microconcentrators that can be integrated with a sensor or a micromachined GC to enhance the signal to noise ratio can include a miniaturized sorbent trap fabricated on a microchip. The microconcentrator can be made on a silicon substrate so that a sensor can be integrated on the same chip. The microconcentrator is composed of at least one microchannel lined with a microheater for in-situ heating. Preconcentration may be achieved on a thin-film polymeric layer deposited above the heater in the microchannel. Rapid heating by the channel heater generates a "desorption pulse" to be injected into a detector or a sensor.